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**CITY STANDARDS**

**PRESSURE PIPE DETAILS INDEX**

**ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT**
CITY OF ST. PETERSBURG

**APPROVED BY:**

**DIRECTOR**

**DATE:** NOV. 2023
**DWG. No.** S50-INDEX-1

**SCALE:** N.T.S.
NOTES FOR PRESSURE PIPE

1. ALL PRESSURE PIPE MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AS SHOWN HEREIN, OR AS DIRECTED BY THE ENGINEER.

2. PIPE JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE PIPE MANUFACTURE REQUIREMENTS.

3. THE CONTRACTOR SHALL ADJUST PIPELINE ALIGNMENTS HORIZONTALLY AND/OR VERTICALLY AS REQUIRED TO AVOID CONFLICTS WITH ACTUAL FIELD CONDITIONS AS UNCOVERED DURING CONSTRUCTION. FIELD ADJUSTMENTS SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

4. PRESSURE PIPE CLEARANCES SHALL BE AS FOLLOWS:
   A) POTABLE WATER MAINS IN PARALLEL INSTALLATIONS SHALL MAINTAIN A MINIMUM 3FT, PREFERRED 10 FEET OUTSIDE TO OUTSIDE HORIZONTAL CLEARANCE FROM ALL SANITARY SEWERS, STORM DRAINS, AND FORCE MAINS.
   B) POTABLE WATER MAINS WHERE CROSSING SHALL MAINTAIN A MINIMUM OF 6 INCHES, PREFERRED 12 INCHES OUTSIDE TO OUTSIDE VERTICAL CLEARANCE FROM ALL SANITARY SEWERS, STORM DRAINS, AND FORCE MAINS.
   C) POTABLE WATER MAINS SHALL MAINTAIN A MINIMUM OF 6 FOOT CENTER TO CENTER HORIZONTAL CLEARANCE OR 3 FOOT OUTSIDE TO OUTSIDE HORIZONTAL CLEARANCE AND 12 INCHES OUTSIDE TO OUTSIDE VERTICAL CLEARANCE FROM RECLAIMED WATER MAINS.

5. THE CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP EXCAVATIONS DRY AND SHALL PROVIDE ALL SHORING, SHEETING, AND BRACING NECESSARY TO PROTECT WORKMEN, ADJACENT STRUCTURES, UTILITIES, EXISTING PAVEMENT, OR TO MINIMIZE TRENCH WIDTH AT NO ADDITIONAL COST TO THE CITY.

6. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER REGARDING SHUTTING DOWN WATER MAINS. PROPER AND ADEQUATE NOTIFICATION MUST BE MADE TO PROPERTY OWNERS, BUT IN NO CASE SHALL LESS THAN 24 HOURS WRITTEN NOTICE BE GIVEN.

7. THE OPENING AND/OR CLOSING OF EXISTING VALVES OR NEW VALVES INSTALLED IN PRESSURE PIPE SYSTEMS SHALL BE BY CITY WATER RESOURCES STAFF AFTER COORDINATION WITH THE ENGINEER.

8. THE CONTRACTOR SHALL PROVIDE NECESSARY EQUIPMENT AND LABOR TO MAKE TAPS IN PRESSURE PIPE MAINS WHERE TAPPING SLEEVES AND VALVES ARE SHOWN ON THE PLANS.

9. ALL NEW DUCTILE IRON PRESSURE PIPE, FITTINGS, AND VALVE BODIES SHALL BE WRAPPED IN POLYETHYLENE IN ACCORDANCE WITH ANSI/AWWA C105.

10. THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND PROTECT ALL EXISTING POTABLE AND RECLAIMED SERVICE LINES UNDER PAVEMENT OR ELSEWHERE IN THE CONSTRUCTION ZONE. REPLACE SERVICE LINES WHERE SHOWN OR DIRECTED BY THE ENGINEER. ALL RELOCATED SERVICE LINES SHALL BE RE-LOCATED SO THAT THE METER ASSEMBLY WILL NOT BE IN AN ALLEY, DRIVEWAY, OR OTHER VEHICULAR TRAVEL PATH.

11. ALL EXISTING POTABLE AND/OR RECLAIMED WATER SERVICE LINES SHALL BE TRANSFERRED TO THE NEW MAIN, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

12. MAINTAIN A MINIMUM COVER OF 36 INCHES UNDER ROADWAYS, ALLEYS, AND DRIVEWAYS. MAINTAIN A MINIMUM OF 30 INCHES OF COVER IN SODDED AND LANDSCAPED AREAS.

13. THRUST BLOCKING SHALL NOT BE USED, UNLESS ORDERED BY THE ENGINEER. HARNESSED PIPE JOINTS SHALL BE USED. THE LENGTH OF HARNESSED JOINTS SHALL BE AS SHOWN ON THE PLANS.

14. SANITARY SEWER FORCE MAINS SHALL NOT USE GREATER THAN 45° BENDS FOR OFFSETS OR REALIGNMENT OF THE FORCE MAIN. THE 45° BENDS SHALL HAVE A MINIMUM OF 5 FEET BETWEEN THEM, WHEN POSSIBLE.

CITY STANDARDS

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<td>DATE</td>
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ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY:
DIRECTOR

DATE: NOV. 2023
DWG. No. S50-1

SCALE: N.T.S.
TYPICAL PLAN VIEW

CHANNEL POST
SIGN, SEE SAMPLE ABOVE

PRESSURE PIPE

TYPICAL SIGN TEXT

SIGN DETAIL

NOTE:
SIGN BLANK IS 0.080" ALUMINUM STOCK, SIZE AS SHOWN ABOVE, SIGN SHEETING MATERIAL IS 3M BRAND ENGINEERING GRADE REFLECTIVE SHEETING, WITH BLACK LETTERING ON WHITE BACKGROUND, NO BORDER.

CITY STANDARDS

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

SCALE: N.T.S.

APPROVED BY:

DIRECTOR

DATE: OCT. 2019

DWG. No. S50-2
NOTES:
1. FOR 2" THROUGH 12" WATER MAIN.
2. ALL PIPE SHALL BE CUT AND PARTIALLY ASSEMBLED PRIOR TO THE CITY AUTHORIZING SHUTDOWN OF EXISTING MAIN(S) FOR TIE-IN.
3. SHUTDOWN PERIOD SHALL NOT EXCEED THREE (3) HOURS.
4. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED CITY CUSTOMERS PRIOR TO SHUTDOWN.
5. THE CONTRACTOR SHALL SWAB NEW PIPE AND FITTINGS WITH CHLORINE SOLUTION, AS DIRECTED.
6. H = HARNESSSED JOINT. (MECHANICAL JOINT W/ D.I. RETAINER GLAND) (NOT APPLICABLE FOR 2" PIPE)
7. VERTICAL ADJUSTMENT MAY BE OVER AN OBSTRUCTION, IF MINIMUM PIPE COVER AND BOTTOM CLEARANCES ARE AVAILABLE.
8. ALL NEW CAST IRON AND DUCTILE IRON PIPE AND FITTINGS SHALL BE POLY WRAPPED PER AWWA M41
CURBING

CUT AND REMOVE
EXISTING WATER MAIN

SOLID SLEEVE W/ RETAINER
GLANDS TYPICAL

PROPOSED CATCH BASIN

WING, TYP.

EXISTING PIPE
TYPICAL

PROPOSED REALIGNMENT OF WATER MAIN
NO PIPE JOINTS ALLOWED IN THIS AREA

NOTES:
1. FOR 2" THROUGH 12" WATER MAIN.
2. ALL PIPE SHALL BE CUT AND PARTIALLY ASSEMBLED PRIOR TO THE CITY AUTHORIZING SHUTDOWN OF
EXISTING MAIN(S) FOR TIE-IN.
3. SHUTDOWN PERIOD SHALL NOT EXCEED THREE (3) HOURS.
4. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED CITY CUSTOMERS PRIOR TO SHUTDOWN.
5. THE CONTRACTOR SHALL SWAB NEW PIPE AND FITTINGS WITH CHLORINE SOLUTION, AS DIRECTED.
6. H = HARNESS JOINT. (MECHANICAL JOINT W/ D.I. RETAINER GLAND) (NOT APPLICABLE FOR 2" PIPE)
7. ALL NEW CAST IRON AND DUCTILE IRON PIPE AND FITTINGS SHALL BE POLY WRAPPED
PER AWWA M41

4 FITTINGS REQUIRED;
2"-45° OR 90° ELLS
4", 6", & 8"-45° BENDS
12"-22 1/2° BENDS

CITY STANDARDS

WATER MAIN HORIZONTAL
ADJUSTMENT DETAIL

ENGINEERING AND CAPITAL
IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: DATE: OCT. 2019

DWG. No. S50-11

SCALE: N.T.S.

DIRECTOR
50' WATER TRANSMISSION EASEMENT
25', TYP.

SEE NOTE 3

RCP

STEEL

STEEL

RCP

JACK AND BORE DETAIL
(Under existing 36" and 48" water main)
For gravity pipes 12" dia. and greater

6" TYP.
6" TYP.

2'-0"

PROPOSED RCP PIPE

PROPOSED STEEL CARRIER PIPE

SECTION A-A

CONCRETE COLLAR DETAIL

END VIEW

NOTES:
1. This detail shall be used for gravity carrier pipes 12" in diameter and larger.
2. For pipes less than 12" in diameter, shall be in a steel casing. See standard detail-jack and bore (S30-3).
3. Steel for the carrier pipe shall be A304 stainless steel and shall conform to ASTM A269 and shall have continuously welded joints to prevent leakage. All steel carrier pipe shall be internally cement lined and externally be wrapped with polywrap.
4. The elevation of city's water transmission main shall be field verified and shown on cross-section for all crossing applications.

CITY STANDARDS

JACK AND BORE
GRAVITY CROSSING UNDER
WATER TRANSMISSION MAIN DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY:

DATE:

OCT. 2019

DWG. No.

S50-12
NOTES:

1. ALL UTILITY CROSSINGS SHALL BE INSTALLED INSIDE A STEEL CASING OVER THE ENTIRE WIDTH OF THE WATER TRANSMISSION EASEMENT. SEE CITY STANDARD DETAIL-JACK AND BORE (S30-3).

2. STEEL FOR THE CARRIER PIPE SHALL BE A304 STAINLESS STEEL AND SHALL CONFORM TO ASTM: A269 AND SHALL HAVE CONTINUOUSLY WELDED JOINTS TO PREVENT LEAKAGE.

3. EQUIPMENT AND VEHICLES SHALL NOT ENCROACH WITHIN THE EASEMENT WITH OUT APPROVED GROUND STABILIZATION. SEE STANDARD DETAIL-PROTECTION FOR 36" AND 48" WATER TRANSMISSION MAIN FOR VEHICLES LESS THAN 30,000 LBS (S50-16).

4. FOR STEEL CASING REQUIREMENTS, SEE STANDARD DETAIL-JACK AND BORE (S30-3).

5. ALL THRUST AND RECEPTION PITS SHALL BE LOCATED OUTSIDE THE CITY'S WATER TRANSMISSION EASEMENT.

6. ALL BENDS SHALL BE RESTAINED JOINT.

CITY STANDARDS

JACK AND BORE CROSSING UNDER WATER TRANSMISSION MAIN DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: 

DIRECTOR

DATE: OCT. 2019

DWG. No. S50-13
NOTES:
1. ALL UTILITY CROSSINGS SHALL BE LAID INSIDE A STEEL CASING OVER THE ENTIRE WIDTH OF THE WATER TRANSMISSION EASEMENT. SEE CITY STANDARD DETAIL-JACK AND BORE (S30-3).
2. STEEL FOR THE CASING PIPE SHALL BE A304 STAINLESS STEEL CONFORM TO ASTM: A269 AND SHALL HAVE CONTINUOUSLY WELDED JOINTS TO PREVENT LEAKAGE.
3. EQUIPMENT AND VEHICLES SHALL NOT ENCROACH WITHIN THE EASEMENT WITHOUT APPROVED GROUND STABILIZATION. SEE STANDARD DETAIL-PROTECTION FOR 36" AND 48" WATER TRANSMISSION MAIN FOR VEHICLES LESS THAN 30,000 LBS (S50-16).
4. BEND FORCES SHALL BE RESISTED BY RESTRAINED JOINTS.

CITY STANDARDS
OPEN CUT OVER WATER TRANSMISSION MAIN DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:          DATE: OCT. 2019
DIRECTOR

SCALE: N.T.S.

REVISIONS

BY   DATE

S50-14
NOTES:

1. EXCAVATION IN THE WATER TRANSMISSION EASEMENT FOR RECOVERY OF BROKEN DRILL EQUIPMENT WILL NOT BE PERMITTED.
2. REQUIRED DIRECTIONAL BORING EQUIPMENT LIMITS TO BE USE FOR CROSSING WATER TRANSMISSION EASEMENT:
   A: 5,000 to 7,000 LBS. THRUST/PULLBACK-UP TO 4" AND UP TO A DISTANCE OF 400'.
   B: 7,001 to 12,000 LBS. THRUST/PULLBACK-UP TO 6" AND UP TO A DISTANCE OF 600'.
   C: 12,000 to 16,000 LBS. THRUST/PULLBACK-UP TO 8" AND UP TO A DISTANCE OF 800'.
3. THE ELEVATION OF CITY'S WATER TRANSMISSION MAIN SHALL BE FIELD VERIFIED AND SHOWN ON CROSS-SECTION FOR ALL CROSSING APPLICATIONS.
4. ALL DIRECTIONAL DRILLING STAGING AREAS FOR THRUST AND RECEPTION PITS SHALL BE LOCATED OUTSIDE THE CITY'S WATER TRANSMISSION EASEMENT.
GEOWEB GEOTEXTILE GROUND STABILIZATION FABRIC OR EQUAL 60’x 60’ MINIMUM COVER AREA

CENTER LINE OF HAUL ROAD

PLAN VIEW

50’ WATER TRANSMISSION MAIN CROSSING

EXISTING GROUND GRADE

GROUND STABILIZATION FABRIC

APPROACH SLOPE TYP., SEE NOTE 2

5’-0” MINIMUM

VARIES

36” OR 48” PRESSURE PIPE, CITY OF ST. PETERSBURG WATER TRANSMISSION MAIN

FILL FOR PROTECTION AREA, SHELL OR CRUSHED CONCRETE, COMPACTED IN 6” LIFTS WITH A NON-VIBRATORY ROLLER, NOT TO EXCEED 19,000 LBS., STATIC WEIGHT. COMPACT TO 98%, AS PER AASHTO T-180

TYPICAL SECTION THROUGH HAUL ROAD

NOTES:
1. PROTECTION IS REQUIRED FOR ALL CONSTRUCTION OPERATIONS OVER THE WATER TRANSMISSION MAIN WHERE THE EXISTING DEPTH OF COVER IS LESS THAN 5’-0”.
2. THE APPROACH SLOPE(S) TO BE 20’ OR GREATER AS REQUIRED TO ACHIEVE 5’-0” MINIMUM COVER OVER THE WATER TRANSMISSION MAIN.
3. FOR TEMPORARY ENCHROACHMENT OF LIGHT WEIGHT VEHICLES AND EQUIPMENT THAT ARE LESS THAN 30,000 LBS., H15-44 AASHTO.
4. FOR VEHICLES GREATER THAN 30,000 LBS., A FLORIDA REGISTERED ENGINEER’S SIGNED AND SEALED DESIGN MUST BE SUBMITTED FOR REVIEW AND APPROVAL.

CITY STANDARDS

PROTECTION FOR 36” AND 48” WATER TRANSMISSION MAIN FOR VEHICLES LESS THAN 30,000 LBS. DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT CITY OF ST. PETERSBURG

APPROVED BY: ~

DIRECTOR

DATE: OCT. 2019

S50-16
NOTES:
1. BLOCK MAY BE TAPERED OR STRAIGHT, AT THE CONTRACTOR'S OPTION.
2. REINFORCEMENT TO BE : # 4 @ 6" E/W.
3. FLAT SIDE OF THRUST BLOCK SHALL BE PLACED AGAINST SOIL COMPACTED TO 100 % DENSITY.
4. USE WHERE SPECIFIED AND/OR ORDERED. 4" THRU 10" PRESSURE PIPE ONLY.

CITY STANDARDS

REVISIONS

PRECAST CONCRETE
THRUST BLOCK DETAIL

ENGINEERING AND CAPITAL
IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY:

DIRECTOR

SCALE: N.T.S.

DATE: OCT. 2019

DWG. No. S50-20
PLAN

KEEP JOINT BOLTS FREE OF CONCRETE, PROVIDE BUILDING FELT OR EQUAL TO PREVENT BOND BETWEEN FITTING AND CONCRETE ANCHOR BLOCK

SECTION A-A

<table>
<thead>
<tr>
<th>45° BEND</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>A</td>
<td>6&quot;</td>
<td>42&quot;</td>
</tr>
<tr>
<td>B</td>
<td>28&quot;</td>
<td>36&quot;</td>
</tr>
</tbody>
</table>
| C        | 48"| 66"| 66"

CITY STANDARDS

CAST-IN-PLACE VERTICAL THRUST ANCHOR DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: [Signature]
DATE: OCT. 2019
DWG. No. S50-21

SCALE: N.T.S.
DIRECTOR
KEEP JOINT BOLTS FREE OF CONCRETE, USE BUILDING FELT OR EQUAL TO PREVENT BOND BETWEEN FITTING AND CONCRETE

FORM SIDES AS REQUIRED

UNDISTURBED SOIL

PRESSURE PIPE

THRU B DR ENGL. BEND, CAST-IN-PLACE, SEE SCHEDULE BELOW

PLAN VIEW

FINISHED GRADE

SEE NOTE 3

PRESSURE PIPE

REINFORCEMENT BAR MAT REQUIRED FOR SUBSTANDARD SOIL CONDITIONS. THE STEEL REINFORCEMENT TO BE DESIGNED BY THE ENGINEER.

SECTION A-A

<table>
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<th>TEE OR PLUG</th>
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<tr>
<td></td>
<td>11-1/4°</td>
<td>22-1/2°</td>
</tr>
<tr>
<td>THRUST BLOCK DIMENSIONS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>W</td>
<td>H</td>
</tr>
<tr>
<td>6&quot;</td>
<td>1'-0&quot;</td>
<td>1'-0&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>1'-0&quot;</td>
<td>1'-6&quot;</td>
</tr>
<tr>
<td>10&quot;</td>
<td>1'-0&quot;</td>
<td>2'-0&quot;</td>
</tr>
<tr>
<td>12&quot;</td>
<td>1'-6&quot;</td>
<td>2'-6&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>2'-6&quot;</td>
<td>4'-0&quot;</td>
</tr>
<tr>
<td>20&quot;</td>
<td>3'-0&quot;</td>
<td>5'-6&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
<td>3'-6&quot;</td>
<td>6'-0&quot;</td>
</tr>
</tbody>
</table>

NOTES:
1. TEST PRESSURE FOR 6" THROUGH 12" IS 100 psi.
2. TEST PRESSURE FOR 16" THROUGH 24" IS 150 psi.
3. THRUST BLOCKS ARE DESIGNED FOR A MINIMUM 3' OF COVER OVER THE PIPE. IF LESS COVER EXISTS, BLOCKS SHALL BE ENLARGED AS DIRECTED BY THE ENGINEER.
4. L = 3' MINIMUM, POUR TO UNDISTURBED SOIL.

CITY STANDARDS

CAST-IN-PLACE HORIZONTAL THRUST BLOCK DETAIL

APPROVED BY: [Signature]

DATE: OCT. 2019

DWG. No. S50-22
FINISHED GRADE

FRICITION CLAMP ASSEMBLY, SEE STANDARD DETAIL-FRICTION CLAMP (550-24)

TYPICAL OBSTRUCTION

1" CORPORATION STOP, SEE NOTE 4 BELOW

12" MIN. TYPICAL, 18" MIN. FOR SAN. SEWER

TIE ROD

2-1/2" PIPE SLEEVE

CONCRETE THRUST ANCHOR BLOCK, SEE NOTE 1 BELOW

SECTION A-A

FINISHED GRADE

9"x 9"x 1" PLATE, TYP.

Q. OF 2-1/2" PIPE SLEEVE

REINFORCEMENT BARS-

#5 @ 6" E/W, E/F

SECTION C-C

6"Ø x 1/2" STEEL WASHER

9"x 9"x 1" PLATE

Q. PIPE SLEEVE

TIE ROD

PIPE SLEEVE

6"Øx1/2" WASHER

TIE ROD, SIZES VARY, SEE STANDARD DETAIL-FRICTION CLAMP (550-24)

SECTION B-B

NOTES:

1. CONCRETE THRUST ANCHOR BLOCK SHALL BE USED ON BOTH SIDES OF OBSTRUCTION.
2. H = HARNESSSED JOINT: MJ W/DI RETAINER GLAND.
3. HARNESS ALL JOINTS WITHIN 20' OF THRUST ANCHOR BLOCK.
4. PROVIDE AIR RELEASE VALVE ON LOWEST SIDE.
5. ALL BOLTS, WASHERS, RODS, PLATES, PIPE SLEEVES, AND FRICTION CLAMP ASSEMBLIES SHALL BE 304 STAINLESS STEEL.
6. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED CITY CUSTOMERS PRIOR TO SHUTDOWN.
7. FOR ADDITIONAL NOTES, SEE STANDARD DETAIL-FRICTION CLAMP (550-24).

CITY STANDARDS

THRUST ANCHOR BLOCK FOR VERTICAL BENDS DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:
### Schedule

#### Test Pressure - 150 psi

<table>
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<th>PIPE O.D.</th>
<th>ANCHOR DIMENSIONS</th>
<th>TIE ROD DIA.</th>
<th>LUG</th>
<th>CLAMP</th>
<th>CLAMP BOLT DIA.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>H₁</td>
<td>W₁</td>
<td>A</td>
<td>B</td>
<td>A₁</td>
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<tr>
<td>16&quot;</td>
<td>17.4&quot;</td>
<td>5'-6&quot;</td>
<td>8'-0&quot;</td>
<td>2'-0&quot;</td>
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<td>1&quot;</td>
</tr>
<tr>
<td>20&quot;</td>
<td>21.6&quot;</td>
<td>6'-6&quot;</td>
<td>9'-6&quot;</td>
<td>2'-4&quot;</td>
<td>3'-7&quot;</td>
<td>1'-1 1/4&quot;</td>
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<tr>
<td>24&quot;</td>
<td>25.8&quot;</td>
<td>7'-6&quot;</td>
<td>11'-6&quot;</td>
<td>2'-8&quot;</td>
<td>4'-5&quot;</td>
<td>1'-1 1/2&quot;</td>
</tr>
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</table>

### Notes:
1. The clamp bolts shall be tightened to develop full strength of the bolt. First tighten bolt to a snug position, then an additional 3/4 turn of nut.
2. Lug and clamp: shall be plated high strength steel conforming to ASTM A 242.
3. Tie rod, clamp bolts, plates, and washers: shall be high strength steel shall conforming to ASTM A 325.
5. Tie rod, clamp bolts, pipe sleeves, and washers shall be 304 stainless steel as per ASTM A 153.
6. Clamp, and plates shall be galvanized as per ASTM A 123.

### City Standards

**Friction Clamp Detail**

(for thrust anchor block for vertical bends)

Approved by: 

**Brigish Payman**

Director

Date: Oct. 2019

DWG. No. S50-24
NOTES:
2. ASSEMBLY AS SHOWN IS FOR A 4" AND LARGER GATE VALVE, TAPPING VALVE, BUTTERFLY VALVE, AND PLUG VALVE ARE SIMILAR.
3. 2" VALVE, JOINT ENDS SHALL BE THREADED.
TAPPING VALVE W/ MJ OUTLET

304 STAINLESS STEEL, TAPPING SLEEVE

TEST PLUG

ELEVATION VIEW

304 STAINLESS STEEL, TAPPING SLEEVE

TEST PLUG

TAPPING VALVE W/ MJ OUTLET

PLAN VIEW

CITY STANDARDS

DI/MJ WELDED STEEL TAPPING SLEEVE W/TAPPING VALVE DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY: 

DIRECTOR

DATE: OCT. 2019

DWG. No. S50-31
CUT-IN 16" THRU 24" VALVE
IN EXISTING PIPE DETAIL

NOTES:
1. FOR CAST IRON AND DUCTILE IRON PIPE ONLY.
2. CONCRETE FOUNDATION TO BE POURRED ON UNDISTURBED EARTH.
3. PAD FOR VALVE BOX TO BE PLACED IN UNPAVED AREAS ONLY.
4. USE TABLE FOR CONCRETE PAD DIMENSIONS IF USING DIRECT BURIAL VALVE. PIER(S) TO BE SOLID CEMENT BRICK.
5. H = HARNESSSED JOINT: MJ W/DI RETAINER GLAND
6. AFTER AIR IS OUT OF PIPE LINE, CLOSE AND PLUG 1" CORPORATION STOPS.
7. ALL NEW CAST IRON, DUCTILE IRON PIPE AND FITTINGS SHOULD BE POLY WRAPPED PER AWWA M41

CITY STANDARDS

REVISIONS
BY DATE

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:
DATE: OCT. 2019

SCALE: N.T.S.

DIRECTOR

S50-32
STANDARD VALVE BOX

SEE STANDARD DETAIL-MANHOLE RING AND COVER CASTING, TYPE "B" CASTING, LABELED "WATER"

SOLID BRASS PLUG WITH SQUARE HEAD

THREADED GALVANIZED COUPLING

1-1/4" GALV. STEEL PIPE, SCHEDULE 80

4"x4"x3/8" STEEL PLATE, WELD TO PIPE

SECTION LIFTING INSERT

SECTION A-A

LIFTING INSERT, TYP. 4 REQUIRED, SEE DETAIL

PIPE @ VAULT

VAULT C

SECTIONAL PLAN

PLAN VIEW

NOTES:
1. REINFORCING FOR STRUCTURE SHALL BE IN ACCORDANCE WITH FDOT TYPE II.
2. EXTERIOR SHALL BE COATED W/KOOPERS 300M OR EQUAL.

CITY STANDARDS

VAULT FOR 16" OR 20"
BUTTERFLY VALVES DETAIL

VALVE SIZE | D  | H  | M
---|---|---|---
16" | 6'-6" | 6'-0" | 8"
20" | 7'-0" | 6'-0" | 8"

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: [Signature]

DATE: OCT. 2019

DWG. No. S50-33
NOTE:
AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS OF WATER MAIN, AS SHOWN OR AS DIRECTED BY THE ENGINEER.
5' MINIMUM
MAIN NOZZLE TO FACE NEAREST PAVEMENT
21" MINIMUM
24" MAXIMUM
FINISHED GRADE
BACK OF CURB

THRUSt BLOCK, TYPICAL
10' MAX. TO VALVE
ANCHOR COUPLING
ANCHOR TEE
WATER MAIN

NOTES:
1. LOCATION OF HYDRANT AND VALVE TO BE DETERMINED IN THE FIELD. DO NOT PLACE WITHIN 3' OF THE NEAREST OBSTRUCTION.
3. STANDARD HYDRANT W/ 36" BURY. 42", 48", AND 54" BURY ARE AVAILABLE.
4. MINIMUM COVER: 30" IN PARKWAY, AND 36" UNDER ROADWAY AND PAVED AREAS.
5. ALL NEW CAST IRON, DUCTILE IRON PIPE AND FITTINGS SHALL BE POLY WRAPPED PER AWWA M41 (ADD TO ALL NEW ITEMS)

CITY STANDARDS
HYDRANT INSTALLATION DETAIL

APPROVED BY:
DATE: OCT. 2019
DWG. No. S50-35
BRASS NIPPLE, CUT THREADS OFF SAMPLE END

1/2" GLOBE VALVE

3/4" x 1/2" REDUCING 90° ELL

3/4" CURB STOP

TEMPORARY STAKE

TIEBACK

GRADE

NEW 3/4" SERVICE TUBING OR TEMPORARY 3/4" TUBING

3/4" CORPORATION STOP, TO REMAIN AFTER SAMPLING IS COMPLETED

SERVICE SADDLE, TO REMAIN AFTER SAMPLING IS COMPLETED

WATER MAIN

NOTE:
REMOVE ALL ABOVE GROUND MATERIALS, CLOSE CORPORATION STOP, AND TEMPORARY TUBING AFTER ACCEPTANCE OF PIPELINE.

CITY STANDARDS

TEMPORARY SAMPLE TAP DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY:

DATE: OCT. 2019

DWG. No. S50-40
TEMPORARY BLOW-OFF
ROTATE AS REQUIRED

FINISHED GRADE

MAIN NOZZLE TO FACE NEAREST PAVEMENT

21" MINIMUM
24" MAXIMUM

FINISHED GRADE

ASSEMBLY WITH BLOW-OFF

NOTES:
1. LOCATION OF HYDRANT AND VALVE TO BE DETERMINED IN THE FIELD. DO NOT PLACE WITHIN 3' OF THE NEAREST OBSTRUCTION.
3. STANDARD HYDRANT W/ 36" BURY. 42", 48", AND 54" BURY ARE AVAILABLE.
4. MINIMUM COVER: 30" IN PARKWAY, AND 36" UNDER ROADWAY AND PAVED AREAS.

ASSEMBLY WITH HYDRANT

THRUST BLOCK, TYPICAL

WATER MAIN

ANCHOR COUPLING OR ANCHOR TEE

TEMP. THRUST BLOCK
REDUCER, IF REQUIRED

ANCHOR COUPLING OR ANCHOR TEE
PLAN A

PIPE, PLUG, 90° ELL AND THRUST BLOCK TO BE REMOVED AND THE VALVE PLUGGED AFTER FLUSHING

SECTION A - A

NOTE:
1. CELLS OF HOLLOW CORE CONCRETE BLOCK SHALL BE FILLED WITH GROUT. OR CONCRETE BLOCK MAY BE SOLID.
2. NO GALVANIZED PIPE OR FITTINGS SHOULD REMAIN IN THE DISTRIBUTION SYSTEM.
3. USE BRASS FOR THREADED FITTINGS OR HDPE/PVC OTHERWISE.

CITY STANDARDS

2" TEMPORARY BLOW-OFF DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DIRECTOR

REVISIONS

BY DATE

SCALE: N.T.S.

DATE: OCT. 2019

DWG. No. S50-42
NOTES:
1. CELLS OF HOLLOW CORE CONCRETE BLOCK SHALL BE FILLED WITH GROUT OR CONCRETE BLOCK MAY BE SOLID TYPE.
2. AFTER FLUSHING IS COMPLETE AND MAIN ACCEPTED FOR SERVICE, REPLACE FLUSHING PIPE W/ GALVANIZED COUPLING, AND PLUG. TOP OF PLUG SHALL BE 6" TO 15" BELOW FINISHED GRADE, INSTALL IN METER BOX AS REQUIRED OR ORDERED.
3. ALL PIPE MATERIALS DOWNSTREAM OF LINE VALVE SHALL BE POLY WRAPPED D.I. TYPE.

PROPOSED PRESSURE PIPE (PVC OR POLY WRAPPED D.I.)

SEE NOTES 2 AND 3
2" x 90° ELL

LINE VALVE AND BOX, IF ORDERED
PLUG
CONCRETE BLOCK THRUST BLOCK

TYPE "A" PLAN

FLUSHING PIPE: SEE NOTES 2 AND 3
FINISHED GRADE

SECTION A-A

STANDARD CAST IRON METER BOX
COUPLING
90° ELL

CONCRETE BLOCK THRUST BLOCK

SEE NOTES 2 AND 3
2" x 90° ELL

CONCRETE BLOCK THRUST BLOCK

TYPE "B" PLAN

BACK OF CURB

CITY STANDARDS

2" PERMANENT BLOW-OFF DETAIL

APPROVED BY: OCT. 2019
DATE: DWG. No.
S50-43
NOTES:

1. H = HARNESS JOINT. (MECHANICAL JOINT W/ RETAINER GLAND, ANCHOR PIPE, OR ANCHOR TEE).
2. AFTER FLUSHING IS COMPLETE AND MAIN ACCEPTED FOR SERVICE, REPLACE FLUSHING PIPE W/ THREADED, POLY WRAPPED, GALVANIZED PIPE AND COUPLING AND PVC PLUG. TOP OF PLUG SHALL BE 6" TO 15" BELOW FINISHED GRADE. INSTALL IN METER BOX AS REQUIRED OR ORDERED.

TYPICAL PROFILE VIEW

4" GALVANIZED POLY WRAPPED IRON PIPE

4" PLUG, TAPPED 4"

THRUST BLOCK

4" PLUG, TAPPED 4"

PLAN VIEW

PROPOSED PRESSURE PIPE
LINE VALVE (IF SHOWN)
TEE
PLUG
VALVE AND VALVE BOX, IF ORDERED

PLAN VIEW

FLUSHING PIPE, SEE NOTE 2
COUPLING, TYP.
METER BOX
FINISHED GRADE

NOTES:

1. H = HARNESS JOINT. (MECHANICAL JOINT W/ RETAINER GLAND, ANCHOR PIPE, OR ANCHOR TEE).
2. AFTER FLUSHING IS COMPLETE AND MAIN ACCEPTED FOR SERVICE, REPLACE FLUSHING PIPE W/ THREADED, POLY WRAPPED, GALVANIZED PIPE AND COUPLING AND PVC PLUG. TOP OF PLUG SHALL BE 6" TO 15" BELOW FINISHED GRADE. INSTALL IN METER BOX AS REQUIRED OR ORDERED.
VALVE AND VALVE BOX, IF ORDERED

TEE, SEE NOTE 2

PLUG

THRUST BLOCK

PLAN A

PLAN B

PIPE, PLUG, 90° BEND AND THRUST BLOCK TO BE REMOVED AND VALVE PLUGGED AFTER FLUSHING

FINISHED GRADE

90° BEND OR TEE W/ PLUG IF ORDERED

SECTION A-A

NOTES:
1. FIRE HYDRANT TO BE INSTALLED AFTER FLUSHING, IF ORDERED OR SHOWN.
3. BLOWOFFS WILL BE SIZED IN ORDER TO ACHIEVE AT LEAST 2.5 FT/S FLOW RATE.

MAIN SIZE | BLOWOFF SIZE
--- | ---
6" | 6"
6" | 8"
10" | 8"
12" | 8"

CITY STANDARDS

6" THRU 12" TEMPORARY BLOW-OFF DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DATE: OCT. 2019

DWG. No. S50-45
NOTES:
1. H = HARNESSSED JOINT. (MECHANICAL JOINT W/ D.I. RETAINER GLAND, ANCHOR PIPE, OR TEE.)
2. ROTATE 90° BEND TO VERTICAL WHEN TEMPORARY BLOW-OFF IS CONVERTED TO A PERMANENT TYPE BLOW-OFF.
3. AFTER FLUSHING IS COMPLETE AND MAIN ACCEPTED FOR SERVICE, REPLACE FLUSHING PIPE WITH A STUB PIECE OF PIPE, PLAIN END AND PLUG. TOP OF PLUG SHALL BE 6" TO 15" BELOW FINISHED GRADE. INSTALL IN METER BOX AS REQUIRED OR ORDERED.

CITY STANDARDS

6" THRU 12" PERMANENT BLOW-OFF DETAIL

MAIN SIZE | BLOWOFF SIZE
---|---
6" | 6"
8" | 8"
12" | 8"
FINISHED GRADE

SERVICE TUBING

SERVICE SADDLE, MAT'L 304 S/S
SEE NOTE 4

WATER MAIN

CORPORATION STOP

SERVICE CONNECTION DETAIL

FINISHED GRADE

STANDARD METER BOX

CURB STOP-BALL TYPE

3/4" SERVICE TUBING

METER YOKE

METER DETAIL

NOTES:
1. 1" SERVICE: SIMILAR EXCEPT YOKE NOT USED.
2. 1-1/2" SERVICE: USE 2" SERVICE SADDLE AND 2" GATE VALVE, YOKE NOT USED.
   A: 1-1/2" FARSIDE SERVICE(S) TO BE 2" UP TO METER, THEN REDUCE TO 1-1/2".
   B: SHORT SIDE SERVICE(S) REDUCE TO 1-1/2" AT GATE VALVE.
3. FOR COMMERCIAL SERVICES USE ABOVE GROUND BACKFLOW PREVENTOR ON USER SIDE.
4. SERVICE SADDLE REQUIRED WITH ALL P.V.C. PIPE, FOR ALL 1-1/2" AND LARGER SERVICE
   INSTALLATIONS ON DUCTILE IRON PIPE, AND WHERE SHOWN.

CITY STANDARDS

RESIDENTIAL WATER SERVICE CONNECTION DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY: [Signature]
DATE: OCT. 2019

SCALE: N.T.S.

DIRECTOR

DWG. No. S50-50
EXISTING

NEW

10"

10"

1" TYP.

18" ± 2"

2 SUPPORTS MINIMUM

BUILDING FELT, TYP.

4" CONCRETE SLAB

8"x8"x16" CONCRETE BLOCK

COUPLING

TYPICAL ELEVATION

PLAN VIEW

3/4" - 2" WATER SERVICE

<table>
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<th>L (MINIMUM)</th>
<th>CONNECT.</th>
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<tbody>
<tr>
<td>3/4&quot;</td>
<td>3'-6&quot;</td>
<td>THD'D.</td>
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<td>1&quot;</td>
<td>3'-9&quot;</td>
<td>THD'D.</td>
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<tr>
<td>1-1/2&quot;</td>
<td>4'-5&quot;</td>
<td>FLANGE</td>
</tr>
<tr>
<td>2&quot;</td>
<td>5'-2&quot;</td>
<td>FLANGE</td>
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</tbody>
</table>

LEGEND

BP BACKFLOW PREVENTOR
E 90° THREADED ELBOW
M METER
N THREADED ADAPTOR/NIPPLE OR FLANGE
ø PIPE DIAMETER
V 1/4 TURN BALL VALVE

CITY STANDARDS

3/4" THRU 2" WATER SERVICE DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DIRECTOR

DATE: OCT. 2019

SCALE: N.T.S.

DWG. No. S50-51
EXISTING

NEW

10"

10"

18" ± 2"

2 SUPPORTS
MINIMUM

BUILDING FELT, TYP.

4" CONCRETE SLAB

8"x8"x16" CONCRETE BLOCK

COUPLING

EXISTING METER BOX

ELEVATION

PLAN VIEW

3/4" - 2" WATER SERVICE (ALTERNATE)

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<td>2&quot;</td>
<td>3'-1&quot;</td>
<td>FLANGE</td>
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LEGEND

BP BACKFLOW PREVENTOR
E 90° THREADED ELBOW
M METER
N THREADED ADAPTOR/NIPPLE OR FLANGE
φ PIPE DIAMETER
V 1/4 TURN BALL VALVE

CITY STANDARDS

3/4" THRU 2"
WATER SERVICE DETAIL
(ALTERNATE)

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DIRECTOR

DATE: OCT. 2019
DWG. No. S50-52

SCALE: N.T.S.

3/4" - 2" WATER SERVICE (ALTERNATE)
EXISTING NEW

HARNESSED FLANGE ADAPTER
BUILDING FELT, TYP.

10" 18'-5/2" 10"

CONCRETE SLAB

3 SUPPORTS MINIMUM MJ, RETAINER GLANDS, THRUST BLOCK, TYP.
SOLID SLEEVE MJ, RETAINER GLANDS

ELEVATION

(B) BLIND FLANGE TAPPED 2" WITH 2"-1/4 TURN BALL VALVE (THE SECOND TEE CAN BE ELIMINATED IF THE METER HAS A TEST PORT ON THE BODY)

<table>
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<tr>
<th>3&quot; - 10&quot; WATER SERVICE</th>
<th>L (MINIMUM)</th>
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<tbody>
<tr>
<td>3&quot;</td>
<td>14'-5&quot;</td>
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<tr>
<td>4&quot;</td>
<td>16'-3&quot;</td>
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<tr>
<td>6&quot;</td>
<td>20'-5&quot;</td>
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<td>8&quot;</td>
<td>22'-9&quot;</td>
</tr>
<tr>
<td>10&quot;</td>
<td>26'-10&quot;</td>
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</tbody>
</table>

LEGEND
BP BACKFLOW PREVENTOR
B 90° THREADED ELBOW
M METER
T FLANGED BYPASS TEE
Ø PIPE DIAMETER
GV OS AND Y GATE VALVE

CITY STANDARDS

3" THRU 10"
WATER SERVICE DETAIL

REVISIONS

BY DATE

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DATE: OCT. 2019

SCALE: N.T.S.

DIRECTOR

DWG. No. S50-53
EXISTING

NEW

10"

10"

L

18.42"

10"

10"

12"

EXECISTING HARNESSED FLANGE ADAPTOR
BUILDING FELT, TYP.
NEW 4" CONCRETE SLAB

EXISTING METER BOX
MJ, RETAINER GLANDS,
THRUST BLOCK, TYP.

2 SUPPORTS MINIMUM

SOLID SLEEVE MJ,
RETAINER GLANDS

ELEVATION

PLAN VIEW

3" - 10" WATER SERVICE
(ALTERNATE)

<table>
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<td>5'-10&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>7'-0&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>8'-10&quot;</td>
</tr>
<tr>
<td>10&quot;</td>
<td>10'-7&quot;</td>
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</tbody>
</table>

LEGEND

BP BACKFLOW PREVENTOR
B 90° THREADED ELBOW
M METER
Ø PIPE DIAMETER
GV OS AND Y GATE VALVE

CITY STANDARDS

3" THRU 10"
WATER SERVICE DETAIL
(ALTERNATE)

ENGINEERING AND CAPITAL
IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DIRECTOR

DATE: OCT. 2019

DWG. No. S50-54
CITY STANDARDS

DEDICATED 3" THRU 10" FIRE SERVICE
BACKFLOW PREVENTOR DETAIL

REVISIONS

BY DATE

ENGINEERING AND CAPITAL
IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY:

S50-55

DATE: OCT. 2019

DWG. No.

SCALE: N.T.S.
PIPE SUPPORT DETAIL

NOTES:
1. FOR 3" PIPE AND SMALLER SUPPORT, THE BASE SHALL BE 6" SQUARE AND STEEL PIPE SHALL BE 1" DIA.
2. ENTIRE ASSEMBLY SHALL RECEIVE ONE COAT OF STEEL PRIMER, BEFORE INSTALLATION.

CITY STANDARDS

2" JACK STAND DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DATE: OCT. 2019

DWG. No. S50-56